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Subject: RE: 09/514,031

This is a fax for the examiner George Bugg

Regards,
Greg Orme

This is for George Bugg, examiner Art Unit 2613, faxed on June 27th 2004 for application 09/514,031

From Greg Orme,
22 Ellington St.,
Tarragindi, 4121.
Email grego@harmakhis.org

About prior art, comments by me in Italics. These are some references I have found which are relevant to my application.

1. **Schowengerdt in *5,307,162*** *refers to creating a camouflage image but this is only a 2D image, there is no mention of a 3D surface. I refer to a system of emitters and receptors placed around an object to make it appear transparent or invisible. As will be seen later in this letter other people have come up with the same idea in patent applications. My application is clearly before them.*

2. http://www.fakespace.com/

This refers to the designing of a room with 3D on the walls like a holodeck but not using a 3D surface. My application is different from this because it refers to making the wall surfaces themselves a 3D surface.

3. http://www.opticsexpress.org/view_file.cfm?doc=%24(L%3B.J%40%20%20%0A&id=%24)L%2B)JP%20%20%0A

Here the authors use a curved lens array. This was in my application. They also assert that the idea is new, and nonobvious enough to be published by Optics Express. This is a curved screen but also a varying distance in focal length. I would argue that their statements and the fact it was published in Optics Express is evidence this making of a non uniform screen is non obvious.

4. Multiple-viewing-zone integral imaging using a dynamic barrier array for three-dimensional displays

Heejin Choi, Sung-Wook Min, Sungyong Jung, Jae-Hyeung Park and Byoungho Lee
April 21, 2003

http://www.opticsexpress.org/abstract.cfm?URI=OPEX-11-8-927

This also seems to be anticipated in my application. They refer to tilting the barrier array, making it a non uniform surface. Again this is anticipated in my application when at the time 2D and 3D screens were highly uniform. Since my application this non uniformity is being explored and here it was considered non obvious enough to be published in Optics Express.

5. http://www.timesofoman.com/newsdetails.asp?newsid=57655&pn=

This refers to noise suppression by cancellation. My application refers to using sound to create a 3D image in sound, not just using light and other radiation. It also refers to using a 3D image generated in sound to best mimic the sound waves from an object to cancel out the sound. Sound cancellation from my research is not known to be employed in 3D. Since 3D is considered to be non obvious in relation to 2D then I believe 3D sound image formation is also non obvious from 2D sound.

6.

Title:	**EP1117093A2: Multi-dimensional optical disk**
Country:	**EP** European Patent Office (EPO)
Kind:	**A2** Publ. of Application without search report
Inventor(s):	**Kermani, Bahram Ghaffarzadeh**
Applicant/Assignee:	**LUCENT TECHNOLOGIES INC.** News, Profiles, Stocks and More about this company
Issued/Filed Dates:	**July 18, 2001** / Dec. 12, 2000
Application Number:	**EP2000000311059**
IPC Class:	**G11B 7/00;**
ECLA Code:	**G11B7/00M3; G11B7/013D; G11B7/125L;**
Priority Number(s):	Jan. 14, 2000 **US2000000482960**

High Resolution

Low Resolution

15 pages

The application above, EP1117093A2, while European shows the idea of a multidimensional storage surface, and their prior art shows nothing to disallow my application. I refer specifically to this on CD surfaces, hard drives, etc. My attorney mistakenly failed to put some of these details in the main specification but they are outlined in the provisional. I have been told by another examiner at the Patent Office this material is still allowable.

Lucent seemed to have found nothing to indicate a 3D surface on a storage device has been done before, and it seems unlikely their claims are frivolous. I mention this also because they may have associated applications on this in the US but I have been unable to find them. There is a US priority number listed.

Clearly they consider the idea to be novel and inventive, which is evidence that mine is since it was before them.

7. http://www.csonline.net/bpaddock/philadelf/adaptivecamouflage.htm

This shows NASA is currently developing adaptive camouflage, of making an object transparent with 3D screens as described in my application. This shows clearly I believe that the idea is non obvious. I have not been able to find any applications for patents related to this, but it seems likely they may be applying for some.

8.

Fiber-optical large-screen thin television display device

Patent Number:	CN1226119
Publication date:	1999-08-18
Inventor(s):	CAO JINGHUAN (CN)
Applicant(s)::	CAO JINGHUAN (CN)
Requested Patent:	CN1226119
Application Number:	CN19980104750 19980213
Priority Number(s):	CN19980104750 19980213
IPC Classification:	H04N5/74 ; G02B27/18
EC Classification:	
EC Classification:	
Equivalents:	

Abstract

The colour large-screen thin-type TV display device is characterized by that the picture produced

by CRT cathode-ray tube or the picture scanned and modulated by LCD liquid crystal light valve is projected via objective or directly coupled to the input end of optical-fibre display screen which is made of plastic optical waveguide fiber and substituted for original reflective fluorescent screen. Said optical fibre display screen is equivalent to a specific optical lens capable of amplifying image and turning optical axis. By utilizing the turning of optical fibre and amplification a large picture image which possesses less geometric distortion and good colour convergence, and is identical to CRT tube in brightness, contrast and articulation can be obtained at output end of the optical fibre display screen. So that the invented large-screen thin-type TV display device can be produced

This is the same as in my application, attaching optic fibres to a screen. While not a US application it is after mine and indicates the state of the art. I refer to connecting a display screen by optic fibre just as I believe this application does. This I believe is further evidence that aspect of my invention is non obvious and novel. There may be an associated US application to this.

9. *I believe this application interferes with my own. Mine refers to 3D screens where the features are non uniform. Here they claim the same thing in regard to non uniform parts of the screen. They have been granted a patent which indicates the non uniformity is novel and inventive. I believe then this shows my application referring to non uniform parts of a screen is novel and inventive.*

Hamagishi, et al. in 6,040,807 *claim a 3D surface of the barrier kind in which the slit pitches are non uniform:*

Claim 8. The three-dimensional display according to claim 1, wherein

the whole of said vertical striped filter is divided into a plurality of cycles in a vertical stripe shape, and the slits are so formed that slit pitches in each of the cycles are non-uniform, and the average of the slit pitches in the cycle takes an ideal value operated from a distance between the eyes of the observer and a pixel pitch in the display panel.

My application refers to many instances of non uniform irregular spacings of aspects of the 3D screen, for example in tubes which are the same as barriers and slits. This may be grounds for an interference.

This is referred to in their specification:

"Furthermore, the whole of the vertical striped filter according to the present invention may be divided into a plurality of cycles in a vertical stripe shape, to form slits so that slit pitches in each of the cycles are non-uniform, and the average of the slit pitches in the cycle takes an ideal value operated from a distance between observer's eyes and a pixel pitch. Since the barrier pitches in each of the cycles may be non-uniform, the number of types of barrier pitches may be a plural. That is, not less than three types of barrier pitches may be mixed in the cycle. In order to simplify the control of the manufacturing apparatus, it is preferable that two types of barrier pitches, for example, a barrier pitch larger than an ideal value and closest to the ideal value which can be formed and a barrier pitch smaller than the ideal value and closest to the ideal value which can be formed are

combined with each other.

If two types of barrier pitches are thus mixed in each of the cycles, it is possible to simply operate the mixture ratio by a method of calculating the values of two unknown quantities from their unit total and the total of one of their attributes. For example, in a manufacturing method utilizing a laser for controlling the position for irradiation in units of 1 .mu.m, it is possible to manufacture a vertical striped filter having an average barrier pitch of 0.22037 mm if a barrier pitch of 0.221 mm larger than the ideal value 0.22037 mm and a barrier pitch of 0.220 mm smaller than the ideal value are mixed at random at a ratio of 10:17. "

Also related to:

9. ***Eichenlaub 6,590,605 which claim:***

15. The device of claim 1, wherein said first substrate comprises a light retardation substrate that includes first alternating strips that retard a component of linearly polarized light therethrough by one-half wavelength, said first strips separated by second alternating strips that retard a component of linearly polarized light therethrough by one wavelength.

19. The device of claim 18, wherein the width of the one wavelength strips is about one-half a width of the one-half wavelength strips.

28. The device of claim 23, wherein said first substrate comprises a light retardation substrate that includes first alternating strips that retard a component of linearly polarized light therethrough by one-half wavelength, said first strips separated by second alternating strips that retard a component of linearly polarized light therethrough by one wavelength.

These refer to an irregular or periodic variation in the surface of the 3D screen, as in my application. Again they claim non uniformity of a screen as novel and inventive, and have no prior art to indicate otherwise with my application. Since mine is before theirs I believe this is additional evidence my concepts of a non uniform screen in many aspects is also novel and inventive. This may also be grounds for an interference.

10. Bettinger 6,333,726

programmed means whereby said power controller activates an individual pixel to project an orthogonal image of a portion of said occulted background perpendicular to the observer in his line of sight, whereby the summing of the orthogonal images of all portions of said occulted background produces a concealed orthogonal projection of the total occulted background.

This implies a form of 3D screen as only that can do this job perfectly from all direction. I also refer to using LCD screens for this. I also refer to using computer programs to

create computer graphics in my application. He is referring to the differing views from different directions being transformed into an appropriate image form at pixel positions. I believe I went into this in some depth by examples of how to calculate the angles parts of a 3D image need to point to. Also the mathematics of this is quite easy to professional mathematicians and should be formulae not patentable. This may also be grounds for an interference.

11. Schlenker; Wesley E. 6,459,076

This discloses a 3D system for camouflage the same as mine. He find no other prior art than 5,307,162. Again this indicates my idea is novel and inventive, and I also believe this is grounds for an interference.

12. Reynolds , et al. 6,338,292

A camouflage system using infra red light, in my application it refers to all frequencies. This also uses liquid crystals which I specify in my application. The parts also change color which is described in my application as part of a 3D image.

13. *6,239,830*

I believe this application also says the same thing as my own, using non uniform parts in a 3D screen. They also claim this as their own, and show no prior art I see here to indicate anything before me. This lends further evidence that the idea of a non uniform 3D screen is novel and inventive enough to get patented.

8. A displayer as described in claim 7 wherein the width of the vertical opaque stripes of the mask pattern varies dynamically according to the ratio

(gap between image and mask)/(half the mask stripe width)

18. A method for displaying comprising the steps of:

viewing where a viewer is disposed in space with a camera;

determining where the viewer's first eye and second eye are disposed in space with a computer connected to the camera;

interleaving a first image and a second image onto a first screen;

varying spacing between the interleaved first image and second image as a function of where each eye is in space to which the respective image is associated; and

coordinating a display of a mask pattern on a second screen disposed between the first

screen and the viewer so the viewer only sees the first image of the first screen with the viewer's first eye and only sees the second screen with the viewer's second eye.

14. 20020001128

54. An element as claimed in claim 53, wherein the first and second retarders comprise first and second strips which alternate with each other.

55. An element as claimed in claim 54, wherein the first strips have a first width and the second strips have a second width less than the first width.

In this application they are also claiming a periodic non uniform arrangement of the elements, just as in my application. I see no indication of prior art invalidating mine, and believe this is evidence the concept is novel and inventive.

15. US2004041747

26. The 3D image/2D image switching display apparatus according to claim 1, wherein at least one of said first and second optical unit is divided into a plurality of portions as seen from a direction perpendicular to a display surface of said display unit and said plurality of portions are movable independently of one another.

Here I believe this is equivalent to in my application, where parts could move in the screen. This also indicates that idea is novel and inventive.

16. 6,501,414

1. A method of detecting anomalies in a microwave penetrable material, comprising:

transmitting a microwave signal that is stepped over a plurality of frequencies, said microwave signal being transmitted at each of a plurality of positions in said microwave penetrable material;

receiving a plurality of reflections for said plurality of frequencies at each of said plurality of positions, each of said plurality of reflections having a magnitude and a phase and a time delay;

producing a complex target data vector from said plurality of reflections at each of said plurality of positions;

producing a complex reference data vector which is representative of an anticipated complex target data vector of said microwave penetrable material when said anomalies to be detected are not present within said microwave penetrable material;

comparing said complex target data vector with said complex reference data vector for producing a response signal at each of said plurality of positions; and

detecting said anomalies in said microwave penetrable material from changes in said response signal for each of said plurality of positions.

This is the equivalent of creating a large 3D screen with receptors and emitters. In my application I specifically refer to radar and all electromagnetic radiation. This also indicates my idea is novel and inventive.

17. 5,940,346

A navigation system and method for identifying a position or navigating an autonomous robotic platform within an area is provided including a moveable device having an acoustic transmitter for transmitting an acoustic signal, an electronic processor device and an RF receiver; and three or more beacons positioned proximate the area, each beacon including a signal receiving apparatus responsive to the acoustic signal and an RF transmitter, the acoustic signal and the RF signal received from each of the beacons being processed in the electronic processor device to identify the location of the platform within the area.

This is equivalent to a 3D screen using sound waves where the receptors and emitters can move around. I believe this is anticipated by my application referring to sound waves, 3D imaging, the emitters and receptors able to move around. They are basically imaging an object in 3D with receptors.

18. 6,702,442

A substantially monocentric arrangement of optical components provides stereoscopic display of a virtual image, electronically scanned by resonant actuation of a resonant fiber scanner (137) using a flexible optical waveguide and projected, as a real intermediate image, near the focal surface (22) of a curved mirror (24) by means of a ball lens assembly (30). To form each left and right intermediate image component, separate left and right image generation systems (70) each comprise a resonant fiber scanner (137) that itself comprises a resonant cantilever portion (139) of optical fiber (138) that directs a modulated beam onto a curved surface (40) for projection by a ball lens assembly (30). A monocentric arrangement of optical components images the left and right scanning ball lens pupil at the corresponding left and right viewing pupil (14) of the observer (12) and essentially provides a single center of curvature for projection components. Use of such a monocentric arrangement with a curved intermediate image source and ball lens assemblies (30) provides an exceptionally wide field of view with large viewing pupils (14).

In my application I refer to tubes which can move about, in and out in any direction which is referring to scanning to receive light, an image, etc. This seems to be the same. Basically this is a tube which moves in a predetermined pattern to scan an image. In my

application I refer to tubes and one aspect is where they can be pointed in different directions and act as a receptor. While they are using just one tube here I make no case in my application why they have to be more than one tube.

Also ***6,550,918, 20020075452, 6,416,181, 6,511,182, 6,702,442***

19. 6,294,775

A minimally invasive, medical, image acquisition having a flexible optical fiber serving as an illuminating wave guide. In one resonance mode, the distal end of the fiber is a stationary node. The fiber includes a lens at the distal tip which collimates emitted light. A scan lens is positioned off the end of the fiber. The relative magnifications of the lenses and the relative positions determines the pixel resolution. In particular, the illumination fiber outputs a light beam or pulse which illuminates a precise spot size. A photon detector detects reflected photons from the object, including the spot. Pixel resolution is determined by the area of the illumination spot (and thus the lens configuration), rather than an area sensed by the detector.

This also seems to be a movable scanning tube like in my application.

20. http://www.hitl.washington.edu/publications/r-2003-1/r-2003-1.pdf

Abstract

The resonant fiber scanner produces a flying laser spot scan for display or image acquisition purposes. Dynamic nonlinearities during large amplitude vibrations of the resonant fiber scanner result in distortions in the two-dimensional scan pattern and the acquired images. A dynamic model which includes the fibers dynamic nonlinearities has been developed to understand the nonlinear behavior and as the basis of a controller to remove the scan distortion. A robust state-space controller has been implemented to force the resonant fiber scanner to follow a spiral scan pattern. Acquired images at 250x250 pixel resolution demonstrate improved image fidelity over previous images taken with open-loop scanning.

This is a paper on a scanning fiber like in my application, and the date is well after me. They assert the spiral pattern is better but I believe my applications covers different patterns of imaging.

21. 20010015847

A stereoscopic image pickup system for obtaining parallactic images of an object, the stereoscopic image pickup system includes a pair of, first and second, reflecting members each having a reflecting function, a pair of, first and second, amount-of-light control members arranged to respectively vary amounts of transmission of light fluxes coming from the first and second reflecting members alternately in a time-series manner, an optical member arranged to superpose an optical axis of a light flux having passed

through the first reflecting member and the first amount-of-light control member and an optical axis of a light flux having passed through the second reflecting member and the second amount-of-light control member on one and the same optical axis, an image sensor for converting a light flux coming from the optical member into an electrical signal, and a controller for causing, on the basis of information on a distance to the object, an image taking-in area of the image sensor to differ between a first image formed on the image sensor by the light flux having passed through the first reflecting member and the first amount-of-light control member and a second image formed on the image sensor by the light flux having passed through the second reflecting member and the second amount-of-light control member.

This also seems to have scanning icons to take an image, as in my application.

22. 6,539,132

An optical switch for coupling a trunk optic fiber to a selected branch optic fiber is disclosed. The switch includes one or two optically active elements which are capable of being configured to have a different diffraction angle. The elements are configured so that an optical signal emitted from the trunk fiber is directed into the selected branch fiber. The switch may also operate in reverse to couple a signal from the branch fiber into the trunk fiber.

This appears to be the same as in my application, where a light beam is sent sequentially into a plurality of fibres or tubes.

WO 01/37266 A1

(54) Title: THREE DIMENSIONAL DATA STORAGE DEVICE AND METHOD FOR READING

(57) Abstract: A method for reading a three-dimensional data storage device, including a) providing a data storage medium constituting a three dimensional matrix and a plurality of dye molecules dispersed therein, wherein the dye molecules are capable of a fluorescence change induced by multiple-photon excitation; b) inducing a fluorescence change of the dye by multiple-photon excitation under conditions effective to write an information code in a selected portion of the medium; c) inducing one-photon excitation in the fluorescence-changed dye; d) detecting a fluorescence emission in the one-photon excited dye portion; and e) correlating the fluorescence with the dye molecules contained in the selected portion that are detectably altered effective to retrieve the information code is disclosed. The process can be repeated to write multiple layers of information. The data storage methods and media are particularly useful for storing or archiving a series of three-dimensional images or information in the form of barcodes, medical bracelets, and identification tags. Methods for reading data stored in the data storage media using confocal microscopy are also disclosed.

This seems to be a 3D storage device as described in my application.

(57) Abstract: The invention relates to a method and apparatus for three-dimensional storage of data, including writing and reading of data, using a three-dimensional storage medium, which can be switched between two stable states by physical excitation. The switching between the states of the storage medium is controlled by controlling the duration and/or the intensity and/or the wavelength of the excitation. The writing of the data is effected by switching to a predetermined state within predetermined memory cells of the storage medium, and the readout of data is effected by detecting the momentary state of the storage medium within predetermined memory cells. The excitation is performed with at least three energy beams radiating at an angle to each other. According to the invention, the energy beams (preferably light beams) are formed in an essentially planar fashion, with one dimension (width) of the beam substantially being at least the multiple of a corresponding dimension of a memory cell, while the other dimension (thickness) of the beam substantially being equal to the corresponding dimension of a memory cell.

Also as in my application.

23. 6,176,582

1. An arrangement for the three-dimensional representation of scenes and/or objects based on planar layer images which reproduce different imaging planes of the scenes or objects, in which imaging planes are offset with respect to spatial depth comprising:

   a plurality of imaging elements with fixed focal lengths being provided perpendicular to the viewing direction of an observer or camera so as to be adjacent to one another in a planar raster of lines and columns, the layer images being observed or recorded through said imaging elements;

This application is using varying focal lengths in a 3D screen as in my application.

24. 20020162942 also 20020117605

The invention described herein represents a significant improvement for the concealment of objects and people. Thousands of light receiving surfaces (such as CCD arrays) and sending surfaces (such as LEDs) are affixed to the surface of the object to be concealed. Each receiving surface receives colored light from the background of the object. Each receiving surface is positioned such that the trajectory of the light striking it is known. Information describing the color and intensity of the light striking each receiving surface is collected and sent to a corresponding sending surface. Said sending surface's position corresponding to the known trajectory of the said light striking the receiving surface. Light of the same color and intensity which was received on one side of the object is then sent on the same trajectory out a second side of the object. This process is repeated many times such that an observer looking at the object from any perspective actually sees the background of the object corresponding to the observer's perspective. The object having been rendered "invisible" to the observer

This is basically the same as in my invention, as a cloaking device. I have been in contact with the inventor.

25. 6,730,033

The present invention is defined by the following claims, and nothing in this section should be taken as a limitation on those claims. By way of introduction, the preferred embodiments described below include a two-dimensional transducer array and methods for using the array for two and ***three-dimensional*** imaging. A high volume-per-second scan rate using a limited number of system channels (e.g. 192, 256 or other number of channels) is provided by a transducer array without beamforming circuitry in the probe. A fan beam of acoustic energy is transmitted along a scan plane from transducer elements that extend lengthwise over a substantial portion of the lateral aperture. Rows of these long transmit elements are provided along the elevation aperture for electronic steering of the fan beam in the elevation dimension. One or more rows of smaller receive elements are used for forming beams each representing a scan line along the lateral dimension in response to each transmission of a fan beam. Elevation resolution is provided primarily from the elevationally spaced transmit elements and partially from two or more rows of laterally spaced receive elements. The lateral resolution is responsive to the lateral spacing of the receive elements.

This seems to be sound being directed from apertures in a scanning way which I believe is anticipated in my application.

26. 20020165448

A locating system for determining the location and orientation of an invasive medical instrument, for example a catheter (10) or endoscope, relative to a reference frame, comprising: a plurality of field generators (18, 20, 22) which generate known, distinguishable fields, preferably continuous AC magnetic fields, in response to drive signals; a plurality of sensors (30, 32, 34) situated in the invasive medical instrument (10) proximate the distal end thereof which generate sensor signals in response to said fields; and a signal processor (26) which has an input for a plurality of signals corresponding to said drive signals and said sensor signals and which produces the three location coordinates and three orientation coordinates of a point on the invasive medical instrument.

I believe this is the equivalent of an array of 3D receptors detecting magnetic fields as was mentioned in my application.

27. 20030117545

A flat-panel modulator includes a plurality of separately modulatable elements or pixels in which the modulating elements on the panel are arranged, notionally or physically, into patches or blocks (shown schematically as 53a, b, c) of individual modulating elements

such that space between each patch exists which has no modulating elements. Addressing lines can be located in the space between the blocks, decreasing resistivity. Also the optical resolution of the magnifying optics is much better than if the entire panel were imaged as a whole. Furthermore a seamless image can be built up using suitable optics (51) between the modulator blocks and a screen (52), at least some of the blocks being magnified.

13. A flat-panel modulator including a plurality of separately modulatable elements or pixels and a driver for addressing them, in which the driver addresses a plurality of pixels in parallel in such a way that the effect is of a single larger pixel, and a plurality of such larger pixels are addressed on the entire modulator.

14. A flat-panel modulator including a plurality of separately modulatable elements or pixels and a driver for addressing them, in which the driver addresses pixels in patches or blocks of individual pixels in such a way that the pixels between each patch are not modulated.

22. A display according to any of claims 15 to 21, in which the optical arrangements include one of or a combination of the following: Mini-lenses, possibly consisting of one or more singlet lenses or arrays of singlet lenses; Micro-lens arrays; Gabor Super-lenses; and GRIN lens arrays.

[0044] The immediate consequence of the different magnifications that are implied by any non-uniform composite scheme is that, as the pixel size on the output screen must normally be uniform over its entire area, the pixel size on the modulator cannot be. To take as an example the peripheral scheme previously described, the modulator has two principal areas: a peripheral area containing a number of blocks of pixels and a central area which is simply relay-imaged onto the output screen. If the peripheral blocks are magnified by a factor of three in order to accomplish tiling, then the pixels within these blocks must be three times smaller than within the central block.

[0045] A second consequence of any non-uniform scheme is that the intensity with which the patches are lit must be proportional to the area magnification (or to the square of the linear magnification); this variation in illumination is a disadvantage of all non-uniform schemes compared to the uniform scheme. For example if the central region is imaged with unity magnification and the peripheral blocks with 3:1 magnification then these patches will need to be lit with nine times the light intensity of the central region. This can be achieved, for example, by arranging separate, more intense, lighting for the peripheral regions. Where separate peripheral modulators are employed separate lighting arrangements for these modulators is particularly advantageous.

[0050] A further aspect of the invention relating to the presence of the optical arrangement that is advantageous is that pin-cushion or barrel distortion can be corrected for by adapting the shape and layout of the pixel blocks. Distortion of this sort is peculiar in that only the shape of an image is affected; such a distorted image is otherwise perfect (for example it can still be perfectly focussed, etc.). Correction for this distortion can be

achieved in this way because the distortion can be predicted in advance. In other words, if one-know that a perfect square is distorted into a pin-cushion shape, one can work out the correct barrel shape that will be distorted back into a perfect square (pin-cushion and barrel distortion are the inverse of each other).

I believe this is anticipated in my application where I refer to pixels, elements etc which can be broken up into sub elements in the viewing screen. Also it refers to mixing of different kinds of elements in a non uniform way, as is in my application.

28. 20020196552

In a preferred embodiment, this application describes a system for pixilating a window. A means is provided for separating electromagnetic energy entering a window according to its focal point. Means are provided for separating trajectories of electromagnetic radiation at a curve where its focal points form and for selecting which trajectories of electromagnetic energy will exit the window. A means if provided for selecting at what trajectory said selected electromagnetic energy will exit the window. Multiple users of the window will each see the same views from their different respective vantage points.

I believe this application is directing the pixels on the screen in a direction, as it anticipated in my application. I also refer to a transparent screen to let light through it like a window.

29. 6,740,034

A ***three-dimensional*** (3D) ***ultrasound*** imaging system performs receive-focusing at voxels corresponding to pixels of a display device. The system comprises a display device; transducers for transmitting ***ultrasound*** signals toward the object and receiving echo signals from a voxel corresponding to a pixel on the display device, wherein the voxel is on a scanning region of the object; an RF volume memory for storing signals from the transducers; a signal processor for processing the stored signals to obtain 3D data sets with respect to the voxel; and an image former for forming the 3D image.

I believe this is the equivalent of my screen with receptors and emitters, which can also emit and receive sound.

30. 6,716,174

An ultrasonic imaging method and apparatus are described for electronically scanning a volumetric region using a two dimensional array of transducer elements coupled to a beamformer. Elements of the array are actuated to transmit ultrasonic energy into the volumetric region. Echo signals are received by elements of the array in response to the transmitted ultrasonic energy. Beams are formed which sample the volumetric region that allows choices of size, location and geometry shapes such as in one of a circular and elliptical beam pattern.

Here the array is adjustable so beams of a different cross section can be employed. I believe this is anticipated in my application where sound can be emitted from receptors of different sizes, shapes, cross section.

31. 6,384,516

. An ultrasonic array transducer for scanning three dimensional volumes comprising:

a two dimensional array of a plurality of rows of rectilinear transducer elements,

wherein odd-numbered rows are aligned with each other, even-numbered rows are aligned with each other, and adjacent rows are offset from each other,

wherein said transducer elements are operated in the k.sub.31 mode, and

wherein said transducer elements include electrodes formed on one or more sides of said elements which extend substantially from a top emitting surface of the element to a bottom surface of the element.

Here the elements of the array are non uniform periodic which was anticipated in my application.

32. 6,707,761

A real-time, ***three dimensional,*** acoustical camera and a real-time, range-gated, intensified, electro-optical camera have substantially overlapping fields of view for co-registered imaging of underwater objects at close ranges. The system is typically mounted in an unmanned underwater vehicle but may be used in other fixed or mobile configurations. The coupled fields of view are steerable in an arc around at least one axis over a large field of regard with a servo-controlled rotating mirror system, while the vehicle or the target is moving or hovering. An automated target recognition system uses the multi-modality images to provide enhanced target recognition and/or autonomous operation in unmanned missions.

I believe this is a combination of sound and light receptors in 3D which is anticipated in my application.

33. 6,135,960

This invention incorporates the techniques of geophysical technology into medical imaging. Ultrasound waves are generated from multiple, simultaneous sources tuned for maximum penetration, resolution, and image quality. Digitally recorded reflections from

throughout the body are combined into a file available for automated interpretation and wavelet attribute analyses. Unique points within the object are imaged from multiple positions for signal-to-noise enhancement and wavelet velocity determinations. This system describes gaining critical efficiencies by reducing equation variables to known quantities. Sources and receivers are locked in invariant, known positions. Statistically valid measurements of densities and wavelet velocities are combined with object models and initial parameter assumptions. This makes possible three-dimensional images for viewing manipulation, mathematical analyses, and detailed interpretation, even of the body in motion. The invention imposes a Cartesian coordinate system on the image of the object. This makes reference to any structure within the object repeatable and precise. Finally, the invention teaches how the recording and storing of the received signals from a whole body analysis makes a subsequent search for structures and details within the object possible without reexamining the object.

This seems to be the equivalent of my 3D screen for sound waves, emitting and receiving to make images.

34. 6,719,696 also 6,482,160

An adaptive multidimensional beamformer having near-instantaneous convergence for ***ultrasound*** imaging systems deploying multidimensional sensor arrays is disclosed. In a first step, the multidimensional beamformer is decomposed into sub-apertures. Each sub-aperture is then again decomposed into two coherent subsets of circular and/or line array beamformers in different coordinate directions of the multidimensional array. Implementation of the multidimensional beamformer according to the present invention provides the basis for a 3D ***ultrasound*** imaging system according to the present invention comprising a compact multidimensional sensor array and a compact processing unit that is field deployable and generates high resolution ***three-dimensional*** images in real time. It is also possible to capture four-dimensional images, the fourth dimension being time and the resulting images forming a video image of a volume of a moving organ.

This appears to be a 3D system with the apertures pointing in various directions and using sound as outlined in my application.

35. 5,951,479

An ultrasound imaging system uses a synthetic transmit aperture method with prefocused subapertures. The transmit aperture is divided into several subapertures. Transmission is done sequentially on each subaperture while receiving on the full aperture. The received data sets are then combined using the appropriate delays. In this way the focusing performance of a composite focusing system using a number of focal zones equal to the square of the number of subapertures is achieved. The gain is an increase in the frame rate which is also equal to the number of subapertures used.

I believe this represents a screen with receptors and emitters in an non uniform or periodic pattern using sound as disclosed in my application.

36. 6,385,474

The present invention relates to a method and apparatus for the construction and/or use of multidimensional fields that can be used for high-resolution detection and characterization of features within objects. The multidimensional field is constructed from data that is collected by an array of radiation detectors that substantially surround the object under study. The detected radiation is produced by an array of radiation sources and is subsequently scattered, reflected, transmitted, or diffracted by the object under study and any features within the object under study. In particular embodiments of the invention, the radiation that is used is ultrasonic radiation and the object under study is human or animal tissue or an organ. In this case, the invention permits the detection and identification of cancer by an intelligently trained evaluation system.

This appears to be using an array of emitters and receptors as disclosed in my application.

37. 6,336,899

An ultrasonic diagnosis apparatus which includes a plurality of ultrasonic transducers arranged two-dimensionally. In the ultrasonic diagnosis apparatus, the ultrasonic beams are transmitted by the ultrasonic transducers for three-dimensionally scanning a target of the object, and then, ultrasonic echo signals are obtained from the ultrasonic transducers. On the basis of the ultrasonic echo signals, three-dimensional data with respect to at least one of structure information and blood flow information in the object are generated in real time. Then, on the basis of the three-dimensional data, image information including at least one of a two-dimensional tomographic image and a three-dimensional projection image of an arbitrary cross section within the object is generated in real time. On the basis of the image information, navigation information for navigating a puncture needle toward the target of the object is displayed.

Also an array of sound emitters and receptors to make a 3D image as disclosed in my application.

38. 6,641,534

Methods of scanning using a two dimensional (2D) ***ultrasound*** transducer array are disclosed. The 2D ***ultrasound*** transducer arrays include at least one row of ***ultrasound*** transducer elements that is configured to extend in a curved dimension of the array and at least one column of ***ultrasound*** transducer elements that is configured to extend in a linear dimension of the array. A 2D ***ultrasound*** transducer array can be used to scan by defining a sub-aperture of the 2D ***ultrasound*** transducer array that includes a plurality of ***ultrasound*** transducer elements in the curved dimension of the array and in the linear dimension of the array and exciting the ***ultrasound*** transducer elements included in the

sub-aperture to generate a transmit/receive ***ultrasound*** beam. Related 2D ***ultrasound*** transducer arrays and elements are also disclosed.

This seems equivalent to a non uniform or periodic 3D screen with sound as disclosed in my application.

39. 6,623,432

6. The ultrasonic diagnostic imaging system of claim 1, wherein the array of transducer elements further comprises transmit groupings of transducer elements, the transmit groupings being of a different configuration than hexagonal.

7. The ultrasonic diagnostic imaging system of claim 6, wherein the configuration of the transmit groupings is chevron-shaped.

8. The ultrasonic diagnostic imaging system of claim 6, wherein the configuration of the transmit groupings is linear.

9. The ultrasonic diagnostic imaging system of claim 6, wherein the configuration of the transmit groupings is diamond-shaped.

10. The ultrasonic diagnostic imaging system of claim 1, wherein the array of transducer elements further comprises transmit groupings of transducer elements, the transmit groupings comprising fewer elements than the hexagonal groupings.

11. The ultrasonic diagnostic imaging system of claim 1, wherein the array of transducer elements further comprises transmit groupings of transducer elements which act to transmit beams from the center of the array.

12. The ultrasonic diagnostic imaging system of claim 1, wherein the elements of each hexagonal grouping are sized and packed such that the echo signals received by the elements of the grouping are aligned to within one wavelength of a nominal receive frequency.

This appears to be a non uniform or periodic series of receptors for sound as disclosed in my application.

40. 6,622,562

1. An ***ultrasound*** annular array transducer for electronic steering of a symmetric focus F.sub.z from a near focus, F.sub.n to a far focus F.sub.f by adding delays to array element signals, comprising:

   a plurality of annular array elements divided into groups of at least one of neighboring elements of the plural array elements, each group having a different fixed mechanical pre-focus, and the array elements within each group having

substantially equal area,

wherein a central group of the plural groups of array elements participates in an active aperture of said transducer for the whole focal range from F.sub.n to F.sub.f with a pre-focus F.sub.0 selected between F.sub.n and F.sub.f,

wherein beyond a depth F.sub.n1 at which a focal diameter of the central group expands past a selected limit, a next outer group of array elements is included in the active aperture from F.sub.n1 to F.sub.f, a fixed pre-focus F.sub.1 of the next outer group being selected between F.sub.n1 and F.sub.f,

and wherein beyond each depth F.sub.nm the focal diameter expands past selected limits and the next outer group of elements is included in the active aperture from F.sub.nm to F.sub.f, a fixed pre-focus F.sub.m of the next outer group being selected between F.sub.nm and F.sub.f,

so that the focal diameter of the array transducer is kept below selected limits within the whole region from F.sub.n to F.sub.f as the focus of the annular array is steered electronically.

This appears to have a varied focal depth and non uniform array as in my application.

41. 6,611,141

2. The system of claim 1 wherein the variance is estimated if one of the first indication of the position of the object or the second indication of the position of the object cannot be determined.

3. The system of claim 1, wherein the first tracking system is electromagnetic.

4. The system of claim 3, wherein the electromagnetic system uses energy in the visible spectrum.

5. The system of claim 3, wherein the electromagnetic system uses energy in the infrared spectrum.

6. The system of claim 1, wherein the second tracking system is magnetic.

I believe my application anticipated this by a 3D imaging system using all electromagnetic frequencies, sound, sonar, electrons, positrons, magnetic fields,

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confidential fax

To: **US Patent Office**
Fax Number: 0011-1-703-872-9306

From: **Greg Orme**
Fax Number: 61+ 7 33022469
Business Phone:
Home Phone:

Pages: 12
Date/Time: 27/06/2004 5:51:02 PM
Subject: RE: 09/514,031

This is for the examiner George Bugg, a reply to the non final rejection. Payment for the one month late fee should be received there today by faxed authority to debit my credit card..

Regards,
Greg Orme.

DETAILED ACTION

Drawings

Replies are in Italics below.

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the elements of the device as claimed in claims 1-4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Since the claims have been altered I assume this may no longer apply. The features shown in the drawings refer to a part of the screen topography, usually tubes in patterns to create various image effects including a 3D image.

Figure 1 just represents a generic screen.

Figure 2 represents recessed tubes containing receptors and/or emitters.

And so on.

I don't see how correcting drawings is necessary since they show details that were in the claims before I changed them. I would prefer though to remove the drawings than abandon the application, though I don't understand why. The attorney at the time seemed to be quite happy with the drawings.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

An abstract on a separate sheet is being faxedseparately.

Claim Objections

3. Claim 14 is objected to because of the following informalities: Claim 14 depends from itself. Appropriate correction is required.

Claim 14 was an error in numbering, the claims have been rewritten.

Basically I have included all the features I am looking to claim. You may decide some aspects need to be put in a divisional, and be altered in other ways. I thought it was better to put all the features I want to claim in so we can work from there.

I have been advised I can alter the claims like this. If it is not so then if you tell me I can redo the original claims in the same structure.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

I have removed claim 20.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-4, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 5,905,593 to Lo et al.

8. With regard to claim 1 and 20, Applicant claims **"A device for transmitting a 3D image, the device having a converter for converting 2D image signals representing a 3D image into image signals representing a 3D image, a transmitter means for transmitting 2D image signals to the converter and the converter in use being adapted to emit the image signals representing a 3D image whereby an observer is able to observe a 3D image represented by the image signals."**

9. Column 3, lines 12-49, of the Lo reference, disclose a 3D viewing system. Lo further states that video signals can be received by an antenna or conveyed from a signal conveyor, which conveys images stored in a proper storage medium. In addition, Lo teaches that the images conveyed are composite views, i.e. 3D images, which are composed form 2D images. Moreover, element 20 of Figure 1 is a lenticular layer, which is used to convert the conveyed 2D images into a 3D image which is viewable, or observed by an observer by watching the screen of element 10, in Figure 1.

10. With regard to claim 2, as shown in Figure 1, the Lo apparatus contains a converter with a screen, which emits the image signals that represent the 3D image.

11. As for claim 3, as shown in Figure 1, the lenticular lens layer 20 has an outer surface with a predetermined three-dimensional topography.

12. As for claim 4, Lo states in column 3, lines 26-35, that the lenticular layer is attached to the monitor screen such that the longitudinal axes of the lenticules are substantially oriented in the vertical direction, or perpendicular to the lines joining a viewers eyes to the axes. In other words, 2D images will be emitted form the outer surface of the monitor screen 10, and into the lenticular lens layer 20, perpendicular to the lens layer 20, or a surface having a three dimensional configuration with periodic peaks and troughs, as shown.

The claims have been altered as shown. Some of the features for example refer to a non uniform distribution of lenses, icons, etc. Lo refers to an even system of lenses. Attached also is a list of further prior art and also some granted patents that claim a non uniform distribution on their surface. Since these are granted they are presumed to be non obvious by their examiners.

My application discloses a much wider range on non uniform features in a signal surface, and since these are variations in these granted patents then I would believe these would also be non obvious.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 5-19 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,905,593 to Lo et al.

15. As for claims 5 and 6, Figures 3 and 5 shows light being emitted from the outer surface of the screen. While Lo does not show the particulars pertaining to a periodic wave pattern, all light travels in a waveform which has a frequency, and therefore is periodic, or based on time.

16. As for claims 7 and 8, any one of the lenticules of element 20, shown in Figure 1 can be construed as an emitter, since light passes through them. Moreover, each one individually, and collectively, is associated with part of a 3D image, and the 3D as a whole respectively.

17. As for claims 9 and 10, Figure 1 shows the lenticules evenly distributed, and wherein the outer surface of element 20, is the emitter, as shown in Figures 3 and 5.

18. With respect to claims 11 through 18, it is the opinion of the Examiner, that the emitter pattern, its physical make-up and or shape, and various other limitations as claimed, are a matter of obvious variation. Emitter spacing and shapes are often manipulated in an effort to control the direction and amount of light, which passes

through them, and are well known techniques in the art of 3D imaging. Furthermore, such manipulation are in fact taught by the Lo reference, as shown in Figure 5, wherein the spacing of lenticules is critical to the emission pattern.

19. With regard to claim 19, column 3, as well as Figure 1, shows the lenticular layer as a sheet, which can be either temporarily or permanently mounted, to a television monitor. Moreover, it has a predefined shape, and the lenticules are evenly spaced across the layer.

The claims I have added have I believe addressed the problems you outline. I do not agree that the shapes of the emitter patterns are varied in a non uniform way in known prior art. As the prior art document also faxed says, there have been some granted patents well after my application that have been granted variations on the non uniform elements in a screen idea.

As to the statements that the further claims 11 to 18 are obvious, there are quite a lot of different kinds of lenticular screens with relatively minor adjustments in their formation which have been granted patents. Some additional ones are attached with this reply. Since it is considered non obvious that different parts of the lenticular screen can be altered and these changes can be patented I cannot see why a different system that doesn't even use lenticular lenses could be somehow anticipated.

If this was so then there would have been just one patent with lenticular lenses and then all 3D patent applications after that would have been invalid. As a further example you should have received a letter I had got from a Mr. Klippstein from 4D Vision which I sent some time ago as additional prior art.

They also refer to additional patents in lenticular screens. They also refer to a patent granted in which tubes extend from the surface to form a 3D image. Now this has some similarities with part of my application except that mine refers in this context to holes drilled into the surface and tubes recessed into it, and this application has glass columns outside the surface.

Now I realize that this would mean that some aspects of my claims may have to be modified in relation to this granted patent. The point I am making though is this system was considered non obvious and was granted and by implication the system of lenticular lenses was not considered to have anticipated it.

If you did not receive this information please tell me and I will resend it. I note you did not refer to it but I'm not sure why. I also have recently put together some other prior art involving lenticular screens but am hesitant to send it because I do not believe this is relevant to what I am claiming. If you want though I can send them as well.

Also attached is a list of quite a few granted patents which I believe have basically patented part of my invention, and for which I may wish to make an interference later. Because these patents were granted I believe this implies strongly those aspects are non obvious.

I apologize again for sending this material now but as you recall I have been trying to get the power of attorney changed on my application changed for over a year and this has hampered my ability to communicate with your office. I have spoken many times with Chris Kelly about this and he told me to wait until the examiner wrote to me.

I believe the new claims are nothing like referred to in Lo, and that the system of tubes for 3D referred to is non obvious by relation to the other patent granted using exterior glass columns. .

Unfortunately I am an amateur at the precise format for the claims, but I do know my application extremely well, also the prior art. This mixup with the attorney put me well behind to consider these objections. If we can get to the point where your reply to this addresses the issues I have laid out, I am sure my next reply can be much more focused on these issues.

I would also point out that I had discussed this many times with Chris Kelly and only very recently was I told the problem with changing the power of attorney was because

he was not notified. In fact Sowell was notified years before by my Australian attorneys, but because of his diligent attitude he was communicating on some aspects of the application even though his power of attorney had been rescinded. This gave the impression that he was still working for me, when I assumed he was not.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George A Bugg whose telephone number is (703) 305-2329. The examiner can normally be reached on Monday-Thursday 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George A Bugg

Examiner
Art Unit 2613

GAB

February 25, 2004

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To: **US Patent Office**
Fax Number: 0011-1-703-872-9306

From: **Greg Orme**
Fax Number: 61+ 7 33022469
Business Phone:
Home Phone:

Pages: 14
Date/Time: 27/06/2004 5:43:29 PM
Subject: 09/514,031

This is a fax for the examiner George Bugg, of altered claims for my application.

Regards,
Greg Orme.

22 Ellington St
Tarragindi 4121
Queensland
Australia

confidential fax

To: **US Patent Office**
Fax Number: 0011-1-703-872-9306

From: **Greg Orme**
Fax Number: 61+ 7 33022469
Business Phone:
Home Phone:

Pages: 2
Date/Time: 5/07/2004 12:48:03 AM
Subject: Re application 09/514,031

This is an abstract for my patent application 09/514,031 as requested by the examiner George Bugg.

Regards,
Greg Orme.